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EXAMINER

TRIMMINGS, JOHN P

ART UNIT PAPER NUMBER

2133

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/083,653	<b>Applicant(s)</b> KOENIG ET AL.	
	<b>Examiner</b> John P Trimmings	<b>Art Unit</b> 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2-27-02</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-11 are presented for examination.

#### ***Priority***

The examiner acknowledges receipt of applicant's claim of foreign priority.

#### ***Information Disclosure Statement***

The examiner has considered the Information Disclosure of 2/27/2002.

#### ***Drawings***

1. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to because:
  - a. FIG.6 "UH1" is duplicated at K1 and K2, where in the disclosure (page 11 line 19) the references are "UH1" and "UH2".
  - b. FIG.8 references "IH1" and "IH2" are not mentioned in the disclosure.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

3. The disclosure is objected to because of the following informalities:
  - a. Page 1 line 36, page 2 lines 6 and 7, recites, "A1.1" for FIG.1 but there is no such reference in the drawing. The examiner believes it should read, "A1".
  - b. Page 10 line 5 and 6 describe a circuit with terminating resistors outside the device. The drawing of FIG.8 does not show this arrangement.

c. Page 14 line 13 recites, "E1.1 and E1.2" for FIG.9 but there is no such reference in the drawing. The examiner believes it should read, "E1 and E2".

d. Page 16 lines 1 and 3 recite, "E1.1 and E1.2" for FIG.10 but there is no such reference in the drawing. The examiner believes it should read, "E1 and E2".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1 and 11 recite the limitation "the comparators" in lines 9 and 11 of each claim. There is insufficient antecedent basis for this limitation in the claims.

6. Claims 1 and 11 recite the limitation "the input side" in line 10 of each claim. There is insufficient antecedent basis for this limitation in the claims.

7. Claims 1 and 11 recite the limitation "the signal feeds" in line 13 of each claim. There is insufficient antecedent basis for this limitation in the claims.

8. Claims 1 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per Claim 1:

Claim 1 utilizes "a data comparator" and "respective comparators", and later in the claim refers to "outputs of the comparators". The examiner does not know which comparator(s) are being further limited; because it may be that either one or the other or

both of the aforementioned comparators are the subjects of the said limitation. And so the claim is indefinite for failing to distinctly claim the subject matter.

As per Claim 11:

Claim 11 utilizes "a data comparator" and "a comparator", and later in the claim refers to "outputs of the comparators". The examiner does not know which comparator(s) are being further limited; because it may be that either one or the other or both of the aforementioned comparators are the subjects of the said limitation. And so the claim is indefinite for failing to distinctly claim the subject matter.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 6, 9 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Lai et al., U.S. Patent No. 6763486.

As per Claims 1 and 11:

Lai et al. teaches an input circuit and method for the detection of an interruption in a differential signal feed (column 1 lines 52-53), comprising: a pair of input terminals receiving differential data signals (FIG.9 inputs to comparator Rx); and two inputs of a

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data comparator connected to the input terminals to generate data (FIG.9 Rx), wherein the two input terminals are connected to respective comparators (FIG.9 AUX1 and AUX2), the comparators have an auxiliary voltage applied on the input side (FIG.9 ref+ and ref-), and signals at outputs of the comparators are evaluated such that an interruption of at least one of the signal feeds is detected (FIG.9 Boundary Decoders).

As per Claim 2:

Lai et al. further teaches the input circuit as claimed in claim 1, wherein the input circuit is arranged in an integrated circuit (column 6 lines 53-62).

As per Claim 3:

Lai et al. further teaches the input circuit as claimed in claim 1, wherein the input terminals are connected via a resistor (FIG.9 between + and – inputs) to a terminating potential (FIG.9 ref).

As per Claim 6:

Lai et al. further teaches the input circuit as claimed in claim 2, wherein resistors are arranged in the integrated circuit (FIG.9).

As per Claim 9:

Lai et al. further teaches the input circuit as claimed in claim 1, wherein the outputs of the comparators are respectively connected to a boundary scan cell of a boundary scan shift register (FIG.9 Boundary Decoders).

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**Note:** In reference to all of the above rejections, applicant cannot rely upon the foreign priority papers to overcome the rejections because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al., U.S. Patent No. 6763486 as applied to claim 2 or 3 above, and further in view of Ichie, U.S. Patent No. 5050187.

As per Claim 4:

Lai et al. fails to teach the input circuit as claimed in claim 3, wherein there is at least one current source, which is supplied to the auxiliary voltages at the resistors. But in an analogous art, Ichie does teach this feature (column 14 lines 23-43 and FIG.18 J1 or J2). And in Ichie (column 2 lines 27-34), an advantage is stated which provides stable transmissions over differential lines in the event of shorted or open lines. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to include the current source teachings of Ichie in order to improve the performance of a communications system.



As per Claim 7:

Lai et al. fails to teach the input circuit as claimed in claim 2, wherein resistors are arranged outside the integrated circuit. But in the analogous art of Ichie, column 13 lines 63-68 and column 14 lines 1-43 teach this feature. And in view of the motivation previously stated, the claim is rejected.

As per Claim 8:

Lai et al. fails to teach the input circuit as claimed in claim 7 with current sources and voltage. However, Ichie teaches the input circuit having two current sources (FIG.18 J1, J2), each connected to one of the input terminals (FIG.18 A, B) and to a supply potential (FIG.18 Vcc), and each of the two current sources impresses a current which is lower than the currents flowing during normal operation (column 14 lines 25-43). And in view of the motivation previously stated, the claim is rejected.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al., U.S. Patent No. 6763486 as applied to claim 1 above, and further in view of Phillips, U.S. Patent No. 3825682. Lai et al. fails to teach the input circuit as claimed in claim 1, wherein the auxiliary voltage is greater than the maximum input offset of the comparators and smaller than a minimum voltage swing of the data signal. But in an analogous art, Phillips does teach this feature in column 2 lines 19-47 and FIG.2. The advantage of this invention is stated in column 1 lines 48-67, where a circuit is provided which detects opens and shorts in the input lines. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to include the

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reference voltage teachings of Phillips in order to improve the performance of a differential receiver.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al., U.S. Patent No. 6763486 as applied to claim 1 above, and further in view of Gotoh et al., U.S. Patent Application 2003/0046015. Lai et al fails to teach the input circuit as claimed in claim 1, wherein the input circuit is configured to be switched off. But Gotoh et al. does teach this feature in FIG.10, where the input circuit 220 is switched off by circuit 240, when the circuit is not in test mode. And in column 3 paragraph [0021], the inventor cites the advantage of a circuit that can test and provide verification of inputs without degrading circuit performance (column 2 paragraph [0012]. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to include the separate BSC circuit of Gotoh et al. in order to improve the performance of a differential receiver.

**Note:** In reference to all of the above rejections, applicant cannot rely upon the foreign priority papers to overcome the rejections because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P Trimmings whose telephone number is 703-305-

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0714. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John P Trimmings  
Examiner  
Art Unit 2133

jpt

  
Guy J. LAMARRE  
PRIMARY EXAMINER